



## Hurricane Irma 2017 9/14/2017 – 1030 EDT Update

### EXECUTIVE SUMMARY

- In PR EPA continues to assist the local water and health departments in prioritizing drinking water facilities needs for Federal assistance.
- In Puerto Rico and the U.S. Virgin Islands EPA is conducting environmental assessments. Assessment teams assessing potentially contaminated debris in conjunction with USACE. Assessment teams assessing oil and chemical fixed facilities.
- As a result of the efforts of the incident specific Caribbean Regional Response Team (CRRT) USVI resource request has been submitted. The statement of work is: EPA will conduct oil and hazardous materials field operations, including cleanup and disposal of hazardous materials and oil, and response to orphaned containers. These necessary actions will mitigate actual and potential threats to public health and safety. EPA response may also include household hazard waste collection and disposal, and monitoring of immediate threats to public health and the environment. EPA will coordinate staging, segregation, transportation and disposal of oil and hazardous substances collected under both EPA and USCG's ESF-10 mission assignments.
- RRCC ESF #10 staff is also pursuing funding increases to the support MAs for the continued operation of the REOC, HQ EOC, and other EOCs where EPA personnel are supporting field operations, logistics, and situational awareness.
- Twelve CID/NCERT agents have arrived in St. Croix, USVI to coordinate with FEMA ESF #13 and support the security needs of EPA personnel. Although security will be their priority, NCERT will also be able to assist the Unified Command with the remaining assessment work.

### PUERTO RICO / U.S. VIRGIN ISLANDS CONDITIONS

#### US Virgin Islands (USVI):

- Significant amounts of debris impacting accessibility of ports in St. John and St. Thomas, including damaged ferries and boats leaking oil; a Mission Assignment for a sub salvage unit to assist with port recovery underway; St. Thomas Sub Base Dry Dock is out-of-service due to substantial damage; ferry service from St. Thomas to St. John remains closed

- AT&T crews in USVI working with local utility and emergency management officials to restore service where power is being restored and safe access is possible. Cell tower status: 20.05% outages in St. Croix; 90% outages in St. John; 71.9% outages in St. Thomas.
- Two EPA satellite communications sleds will be shipped to St. Croix to improve voice, internet, and data connections
- Norwegian sailed from St. Thomas to Miami port on 9/12 with 933 evacuees; Royal Caribbean scheduled to depart from St. Thomas with additional evacuees and will open up to any residents who desire to go CONUS.
- SS Wright en route to St. Thomas to provide berthing and meals for emergency response personnel and deliver relief supplies; estimated to arrive on or before 9/16
- St. Croix Henry E. Rohlsen Airport (STX) and runway OPEN and Operational. St. Thomas: Cyril E King Airport (STT) accepting Military aircrafts only. Tentative date of 9/16 to resume commercial flights to St Thomas.
- Power Outages:
  - St. John 2,893 customers without power / 100% power outage
  - St. Croix: 6,905 customers w/o power in STX -31%
  - St. Thomas 19,581 customers without power / 100% consumer outage

#### **Puerto Rico (PR):**

- Airports are open.
- Telecoms: Communications with Vieques and Culebra established using a national interoperability channel. Cellular communications/coverage continues to rapidly improve with the restoration of power. 911 service has been restored for cell phone & landline. 343 of the 1748 (19.6%) cell towers are out of service.
- Power Outages: PREPA: 117,244 clients without electrical service (7.82%) and 1,569,796 with service (92.18) 24,174 clients (1.93%) without potable water service and 21,493 are due to electrical power failure.

#### **PUBLIC AFFAIRS**

The PIO is Elias Rodriguez, who can be reached at 212-637-3664. All press inquiries are directed to him, and coordinated through OPA.

PAD continues to maintain a public facing EPA Response web site at: [www.epa.gov/hurricane-irma](http://www.epa.gov/hurricane-irma). We continue to post for and support Region 4 content along with our own content and it seems to be going well. PAD and the PIO are coordinating with ERT and Region 4 on an Irma story map.

We continue to provide all Region 2 staff with relevant Irma news clips and EPA news releases.

Support of on-the-ground OSCs and the community liaison function is ongoing. Two CICs deployed to PR on Sept. 11 and two CICs deployed to the USVI on Sept. 12. We are receiving daily updates from the CICs on outreach needs and issues, which is greatly assisting the Information Office in assisting the response operations.

#### Public Inquiries:

Members of the public should be directed to EPA's toll free hotline 1-888-283-7626. This line includes bi-lingual capabilities and is on a 12 hour per day/7 days per week basis, from approximately 7:30 a.m. to 8:00 p.m. (Eastern). PIO has coordinated with CEPD and the Regional Public Liaison's office on responding to and tracking Irma public inquiries, comments and requests, especially those with EPA assignments.

Non-emergency (non 9-1-1) calls from the general public will be directed to two numbers in PR and USVI:

For complaints, tips, or information requests, please contact:

- Puerto Rico Emergency Management and Disaster Administration Agency (AEMEAD): 787-724-0124
- Virgin Islands Territorial Emergency Management Agency (VITEMA): 340-774-2244

Media Inquiries: We have been coordinating with the Office of Public Affairs on a daily Irma news release, the latest one issued on 9/13/17. Reporters are directed to email their inquiries to [press@epa.gov](mailto:press@epa.gov).

#### **Region 2 – Hurricane Irma Management Objectives**

- Protect the health and safety of EPA employees pre-deploying and/or responding to the storm aftermath.
- Integrate EPA response assets with federal, state and local response structures
- Minimize social, political, and economic adverse impacts
- Keep the public, stakeholders and the media informed of response activities
- Protect communities from incident hazards
- Keep communities informed of incident hazards and clean up progress
- Establish communication and briefing schedule with R2 senior executives and EPA Headquarters. Support a consistent communications approach agency-wide, enabling EPA to act and speak in unison during these incidents
- Provide situation reports and other information on schedule provided by RIC
- Secure all NPL and removal sites. Regulated facilities and Superfund and oil sites will be surveyed prior to storm fall if a land impact is expected
- Identify vulnerabilities at regulated facilities

- Address any immediate hazardous substance releases or oil spills resulting from the storm's impact
- Assist state and local agencies in ensuring safety of drinking water systems.
- Monitor air quality when/if necessary in response to conditions on the ground.
- Provide guidance for length of work day and deployments as it pertains to this specific event
- Coordinate logistics with deployed personnel to provide transportation options, lodging, security, ground transportation on site;
- Coordinate national resources to assist the Region;
- Identify clearly defined roles for both Regions and Headquarters;
- The response will use the Region's incident specific Data Management Plan (DMP);
- In collecting, sharing, and analyzing environmental data, EPA will give primacy to data with potential human health consequences;
- EPA will work to ensure that its decision-makers have access to the data and expertise they need to make decisions based on sound science;
- Identify early in the response the long term recovery issues the Agency may be requested to support and determine the resource needs to support and sustain those requests to completion.

## DEBRIS RECOVERY

U.S. Army Corps of Engineers and EPA debris team deployed in the USVI. Debris assessments continue. Five debris staging sites have been identified in St. Thomas.

EPA coordinating with ACOE concerning debris assessments and planning in disaster declared areas of Puerto Rico.

## AIR MONITORING

No air monitoring activities.

## EMERGENCY RESPONSE

Daily/Cumulative Summary of Hazard Evaluations/Recovery				
Status	Opened		Closed	
	9/13/2017	Cumulative	9/13/2017	Cumulative
Puerto Rico	5	7	5	7
U.S. Virgin Islands	0	0	0	0
Note: Open means that the target is yet to be recovered. Closed means the target was recovered, left in place, or access was denied to collect the item.				

Daily/Cumulative Summary of Spills/Discharges		
Status	Opened	Closed

	9/13/2017	Cumulative	9/13/2017	Cumulative
Puerto Rico	1	2	0	0
U.S. Virgin Islands	0	0	0	0

## **SUPERFUND NPL, SUPERFUND REMOVAL, AND OIL REMOVAL SITES**

EPA assessment teams have completed their assessments of Superfund and oil sites in Puerto Rico and in the U.S Virgin Islands with the exception of the below sites. The two remaining sites are oil sites. Guayanilla Bay, PR oil spill is a sub-surface oil plume that has discharged oil through a storm sewer line in the past. The storm sewer has been secured as part of the original oil spill response. No oil spills have been reported from this site. The Cruz Bay Oil Tank site involves an oil storage tank where the oil has been removed with the exception of oil sludge in the bottom of the tank. The tank was damaged during the storm but overflights of the area have not shown any oil spills from the site. The site will be addressed once access to St. John is possible.

SUPERFUND SITES (NPL, Removal and Oil)						
Puerto Rico						
Site	Type	Phase 1	Phase 2		Phase 3	All Phases Completed
		Post-Storm Assessment	Site Inspection Needed	Inspected	Additional Response Action	
Guayanilla Bay Oil Spill*	Oil Response	-----	No	N/A	No	-----
U.S. VIRGIN ISLANDS						
Cruz Bay Oil Tank**	Oil Response	09/11/17	Yes	video	No	-----

\*Guayanilla Bay Oil Spill is a pre-storm OPA remediation site being addressed by an OSC.

\*\*Cruz Bay Oil Tank is a pre-storm OPA remediation site being addressed by an OSC. Recent amateur video shows this tank has partially collapsed onto itself, but there was no release because the contents are semi-solid.

## **FIELD RESPONSE ACTIVITIES**

### **PUERTO RICO**

- The Fixed Facility Assessment Team assessed 5 federally regulated facilities during this operation period. For most of the facilities there was no significant impact from Hurricane Irma reported by facility contacts or observed by the teams. Some facilities have compromised security mostly due to downed fencing and surveillance camera damage.
- Specific facility assessment data is now being uploaded into Response Manager by Weston.
- The Fixed Facilities Assessment Team Lead continues communication with PRASA

personnel and requested feedback from PRASA island-wide in regard to impact. Real time information on the status of their impacted plants may be available in the future.

## **U.S. VIRGIN ISLANDS**

- Facility Assessment Teams have completed 7 additional inspections. No issues have been reported for any facility.
- OSC Gallo reported to the St. Croix EOC and coordinated with DPNR and VITEMA regarding the Mission Assignments for the recovery of oil and hazardous materials including HHW (household hazardous waste).
- CIC Azzam and Loney coordinated with DPNR and VITEMA PIO's.

## **REGION 2 REGIONAL EMERGENCY OPERATIONS CENTER (REOC)**

- Coordinated with DECA for referral of potentially impacted facilities in the 10 municipalities of Puerto Rico that received a major disaster declaration.
- CEPD Water Programs conducted facility assessments at non-PRASA facilities on Puerto Rico.

The table below displays the teams that have been deployed based on the assessment results in Puerto Rico or the USVI.

<b>Quantity and Types of Teams Deployed 9/13/2017</b>		
<b>Team Type</b>	<b>Puerto Rico</b>	<b>U.S. Virgin Islands</b>
Assessment Team – All Missions	2	4
Water Assessment	2	0
Hazard Evaluation	2	0
Oil Discharge Assessment	0	0
Container Recovery	0	0
Oil Recovery	0	0
ER/Recovery	0	0
Air Operations	0	0
Contaminated Debris	0	1
Operation Centers (REOC), PREOC, VITEMA, PR IOF, VI IOF	3	2

## **PUERTO RICO**

	CONTAINERS			TOTAL
	Drums (55 Gals)	Large Containers (<55 gals)	Large Containers (>55 gals)	
9/13/2017	0	0	0	0
Total to Date	0	0	0	0

## U.S. VIRGIN ISLANDS

	CONTAINERS			TOTAL
	Drums (55 Gals)	Large Containers (<55 gals)	Large Containers (>55 gals)	
9/13/2017	0	0	0	0
Total to Date	0	0	0	0

## AGENCY COORDINATION

As a result of the incident specific Caribbean Regional Response Team (CRRT) call with EPA, USCG, NOAA, DOI/USFWS, Army Corps of Engineers, FEMA, and DPNR, the USVI has been able to submit resource requests to FEMA with the help and assistance of the ESF organization. MAs are being processed for the oil and hazardous substance mission.

EPA is coordinating with the Coast Guard Pacific Strike Team (PST), who is deploying for Coast Guard Sector San Juan, PR in the USVI, to establish a Unified Command (UC) for the USVI ESF #10 response. The UC will support tactics in the inland and coastal areas.

The NOAA Scientific Support Coordinator will be arriving in St Croix with the Coast Guard at the end of this week. EPA is coordinating with NOAA and the Coast Guard on data collection that is currently occurring for Puerto Rico and USVI, particularly with ESF-10 targets. EPA will share data being collected in Response Manager with the Coast Guard. To support a Common Operating Picture (COP) we will bring Response Manager data into the Environmental Response Management Application (ERMA) site.

NOAA is also sharing USVI imagery from the Civil Air Patrol. And post-storm satellite imagery of St. Thomas.

We continue to share operational information with the Caribbean Regional Response Team (CRRT) federal, Commonwealth, and U.S. Territory agencies.

## SPILL/RELEASE RESPONSE

Hotline Calls as of September 13, 2017	
Number of Irma Related Calls Received During Reporting Period 1300-0100	1
Total Number of Irma Related Calls to Date	2
* EPA is assessing each call to determine appropriate response and forwarding reports to field personnel to conduct further assessments and response as needed.	

## DRINKING WATER / WASTEWATER

As of 8:00 AM on 9/14/17, 1.89% of the population is without drinking water services. This does not include the non-PRASA systems which account for 4% of the PR population.

CEPD/CWD Water Support Group in the REOC is coordinating with PRDOH, FEMA, and the USACE in order to avoid duplication of effort.

**PRASA:** All PRASA waste water treatment plants are in service. CEPD started inspections of Sanitary Pump Stations yesterday. Of the 8 pump stations visited yesterday, six were back in service. The 2 remaining were out of operation due to lack of power. CEPD will visit 5 pump stations today and the remaining 5 tomorrow. The Culebra WWT is being inspected today and the Vieques WWTP next Tuesday. With these inspections, we are finding out that there are not significant problems in PRASA operations.

**Non-PRASA Drinking Water Status:** CEPD and PRDOH contacted most of the non-PRASA systems between Tuesday and Wednesday. No major problems found. The systems without service were due to the lack of primary power. CEPD believes that there is no need to conduct assessments at the non-PRASA systems since there are no major problems encountered.

**PREPA:** 92% of population with power. All PREPA waste water treatment plants are in service.

**USVI Drinking Water Status:** On 9/11/2017 VIWAPA started operating the Reverse Osmosis plant in St. Thomas for WAPA distribution. WAPA previously used desalination but has switched to RO, run by Seven Seas. Mr. Mark working to get the updated status of the entire system (distribution) etc. Boil water notice was issued for Saint Thomas and Saint John. Chlorination system is up and running. CEPD waiting from some information from Mr. Marks in order to request assistance from the OSCs stationed in Saint Thomas.

**USVI Wastewater:** According to a report provided by Waste Management Authority, 6 of the 8 municipal wastewater treatment plants are in service. The only facility not in service is Vessup in Saint Thomas and the assessment of the George Simmonds WWTP has not been completed due to lack of access in the roads. In addition, WMA indicated that 4 of the 15 sanitary pump stations in Saint Thomas and Saint John are not in service. During a conversation held with DPNR on 9/12/2017, DPNR stated that they will request assistance from EPA to conduct assessments at the TPDES facilities in Saint Thomas and Saint John. On 9/13/2017, CEPD requested the OSCs deployed in St. Thomas to assess the wastewater treatment plants and pump stations in Saint Thomas and Saint John.



## REGULATED FACILITIES

The Regulated Facility Team (RFT) continues to monitor responses to EPA's post-Irma facility damage, oil spill, and chemical release assessment questionnaire. RMP, FRP, and SPCC facilities that have responded to the post-Irma questionnaire, including Puma, Total, Limetree Bay Bulk Storage Terminal, PRASA, PREPA, and VI WAPA have reported no spills, no chemical releases, and no upset conditions that could lead to an oil spill or chemical release. All FRP facilities in PR and USVI have responded to the post-Irma questionnaire, except for one in PR. Additionally, the RFT is actively following up on two RMP facilities in PR that have not responded to the post-Irma questionnaire. The RFT is now focusing much of its efforts on contacting SPCC facilities in northeastern PR, Culebra, Vieques, St. Thomas, and St. John. It has been noted that these areas continue to experience damage to communication infrastructure. The RFT continues to provide technical assistance to field assessment teams in PR and the USVI.

The Regulated Facility Assessment Coordinator is coordinating with other EPA regulatory programs to identify facilities that have experienced, or may potentially experience, spills or releases as a result of Hurricane Irma.

DECA-CAPSB-CAS Federal Facility Program Manager was in touch with the 5 federal facilities (FF) inspected in May 2017 under contract with Federal Facility Enforcement Office for multimedia inspections. Four of the 5 FF reported minor hurricane Irma damage due to fallen trees and power outages and no reported environmental events, and one FF no response to date. The DoD Regional Environmental Coordinator reported that the Army Corps of Engineers is working to check on their Vieques and Culebra Formerly Used Defense Sites to verify if any unexploded ordnance were newly exposed or washed ashore from the storm.

## PUERTO RICO

Facility Type	Sites Identified	Pre-Storm Remote Assessment	Post Storm Remote Assessment	Post Storm Field Assessment	Follow-up Action Required
RMP	56	56*	53^	2	0
FRP	22	22*	21^	0	0
SPCC (non-FRP)	232 <sup>#</sup>	232 <sup>#*</sup>	15^	3	0
Total	310 <sup>#</sup>	310 <sup>#</sup>	89^	5	0

\* Pre-Hurricane email requested facilities to self-identify any pre-existing compromised conditions (construction at process areas, tank maintenance, etc.). No facilities reported pre-existing compromised conditions.

^ Based on Post-Hurricane oil spill/chemical release/damage assessment email and phone calls. No facilities have reported oil spills, chemical releases, or upset/damage conditions that could lead to oil spill or chemical release.

<sup>#</sup> This number reflects the number of known non-FRP SPCC facilities believed to be active.

## U.S. VIRGIN ISLANDS

Facility Type	Sites Identified	Pre-Storm Assessment	Post Storm Assessment	Post Storm Field Assessment	Follow-up Action Required
RMP	1	1*	1^	1	0
FRP	6	6*	6^	3	0
SPCC (non-FRP) <sup>u</sup>	57 <sup>#</sup>	57 <sup>#*</sup>	9^	11	0
Total	64 <sup>#</sup>	64 <sup>#</sup>	16^	15	0

\* Pre-Hurricane email requested facilities to self-identify any pre-existing compromised conditions (construction at process areas, tank maintenance, etc.). No facilities reported pre-existing compromised conditions.

^ Based on Post-Hurricane oil spill/chemical release/damage assessment email and phone calls. No facilities have reported oil spills, chemical releases, or upset/damage conditions that could lead to oil spill or chemical release.

<sup>#</sup> There is no SPCC submission requirement. This number reflects the number of known non-FRP SPCC facilities that are believed to be active based on inspection history.

<sup>u</sup> Efforts shifted on 9/13/17 to focus on facilities on St. Thomas and St. John

## EPA RESOURCES

Personnel	EPA Edison, NJ NYC San Juan, PR <sup>^</sup>	FEMA RRCC Colts Neck, NJ	Puerto Rico Deployments*	USVI Deployments*	Totals
EPA	53	1	13	21	88
START/ RST	9	0	3	5	17
ERRS	5	0	0	0	5
Other Contractors	0	0	0	0	0
Totals	66	1	16	26	110

<sup>^</sup>Number includes personnel in the REOC, RICT, CEPD, and CID personnel that are working the response.

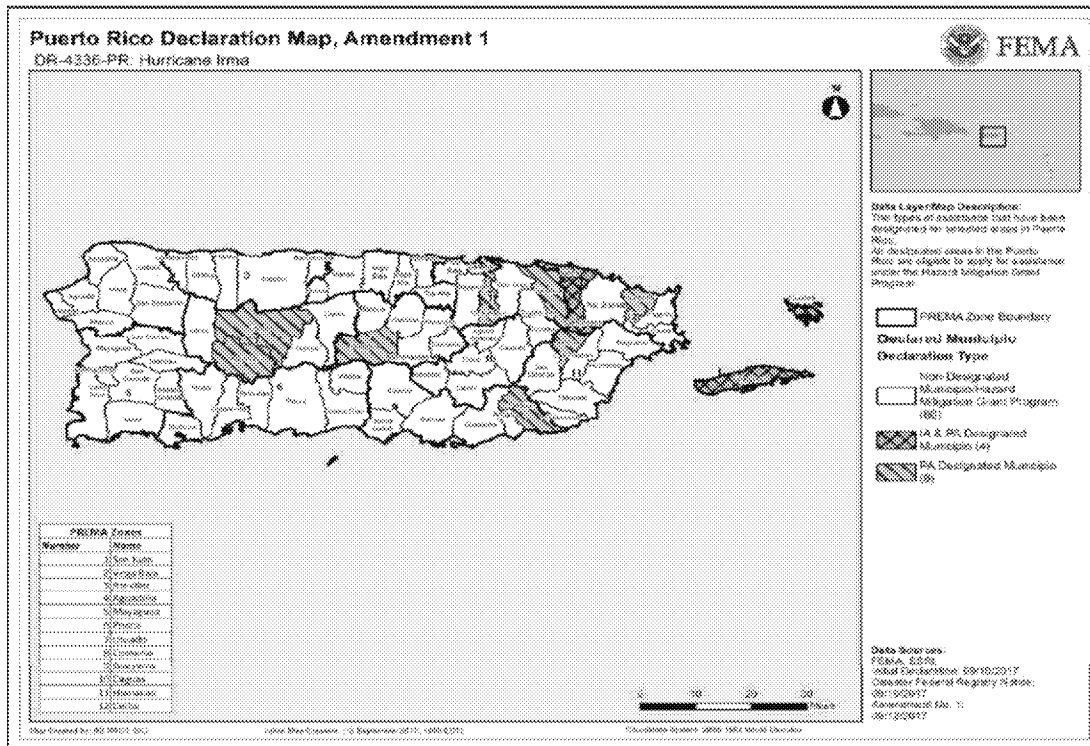
\*Number includes personnel working at coordination centers and EPA Regional offices.

## DECLARATIONS

### Puerto Rico.

Emergency Declaration FEMA-3384-EM effective September 5. Assistance is for all 78 municipalities in the Commonwealth of PR. The Governor of Puerto Rico requested a disaster declaration 9/8.

Disaster Declaration FEMA-4336-DR effective September 9. Declared areas only include Culebra and Vieques. On 9/13 additional municipalities in Puerto Rico have been added to the major declaration, and are now eligible for work under any DFA MA's that we receive. The municipalities are: Adjuntas, Canovanas, Carolina, Guaynabo, Juncos, Loiza, Luquillo, Orocovi, Patillas, and Utuado.

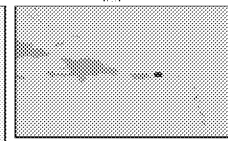
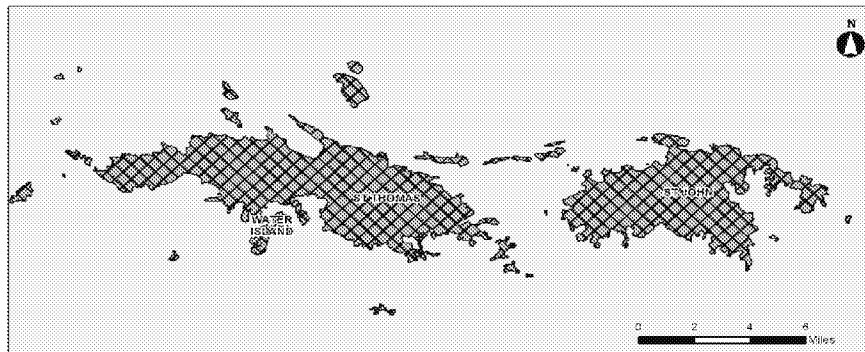


## U.S. Virgin Islands.

Disaster Declaration FEMA-4335-DR effective September 7, 2017. St. Thomas and St. John approved for Individual Assistance, all islands eligible for Public Assistance and the Hazard Mitigation Grant Program.

Emergency Declaration FEMA-3383-EM effective September 5. Assistance is for all islands in the Territory of the USVI.

**U.S. Virgin Islands Declaration Map (07 September 2017, 1200 EST)**  
DR-4335-USVI: Hurricane Irma

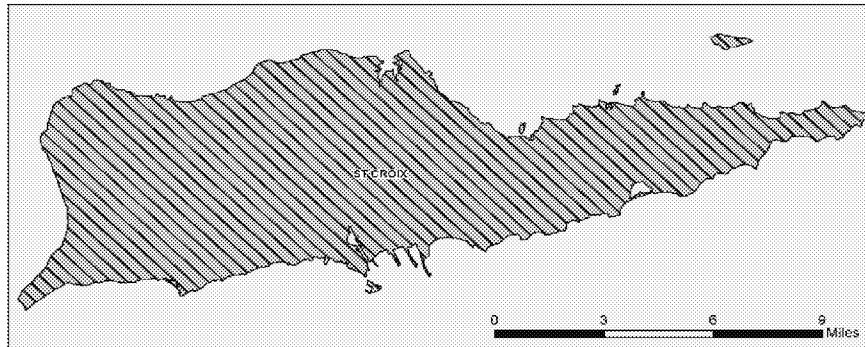


**Data Layer/Map Description:**  
The types of assistance that have been designated for selected areas in the U.S. Virgin Islands. All designated areas in the U.S. Virgin Islands are eligible to apply for assistance under the Hazard Mitigation Grant Program.

**County Declared Declaration Type**

IA & PA Designated County

PA Designated County (Category A & B and DFA)



**Data Sources:**  
FEMA, ESRI;  
Initial Declaration: 09/07/2017  
Disaster Federal Registry Notes: 09/07/2017

Map Symbols: R2 RRCC, G21  
Initial Map Creation: 07 September 2017, 1200 EST  
Coordinate System: WGS 1984 UTM Zone 18N

## FUNDING

Mission Assignment	Purpose	Start	End	Total Amount	Indirect Costs	Amt. Available	Daily Burn Rate	Used	Balance
Number		Date	Date			(after indirect rate)			
VI-17090102-EPA-01	Activate EPA to FEMA R2 RRC Colts Neck, NJ to support FEMA response ops	9/2/2017	9/11/2017	\$10,000	\$1,046	\$8,954	\$1,080	\$8,954	\$0
4335DR-VI-EPA-01	Activate EPA to FEMA R2 RRC in Colts Neck, NJ to support FEMA response ops	9/7/2017	10/7/2017	\$100,000	\$10,466	\$89,534	\$1,080	\$8,640	\$80,894
3383EM-VI-EPA-01	Activate EPA to FEMA RRCC, JFO, EPA REOC, State EOC, PDA & NRA Teams & other coordination venues to support FEMA response ops in VI	9/7/2017	9/16/2017	\$75,000	\$7,850	\$67,150	\$81,600	\$376,800	(\$309,650)
4335DR-VI-EPA-02	Perform assessment of oil/hazardous materials releases, contaminated debris, other environmental	9/7/2017	9/30/2017	\$508,000	\$53,170	\$454,830	\$18,000	\$72,000	\$382,830

	events in VI								
PR-17090102-EPA-01	Activate EPA to FEMA R2 RRC & other locations as necessary for PR. For REOC pre-landfall costs.	9/1/2017	9/11/2017	\$20,000	\$2,093	\$17,907	\$	\$17,907	\$0
3384EM-PR-EPA-01	Activate EPA to FEMA R2 RRCC, EPA REOC, State EOC, JFO, PDA, & RNA Teams & other coordination venues to support FEMA response ops in PR	9/6/2017	9/16/2017	\$75,000	\$7,850	\$67,150	\$10,800	\$28,200	\$38,950
3384EM-PR-EPA-03	To perform assessment of oil & hazardous materials releases, contaminated debris & other environmental events following landfall in PR	9/9/2017	9/30/2017	\$508,000	\$53,170	\$454,830	\$12,000	\$44,400	\$410,430
4336DR-PR-EPA-01	Activate EPA to FEMA RRCC. <i>Funding for EPA command centers is authorized.</i>	9/10/2017	10/10/2017	\$100,000	\$10,466	\$89,534	\$0	\$0	\$89,534

## FUEL WAIVERS

Fuel waivers are not needed for PR or USVI.

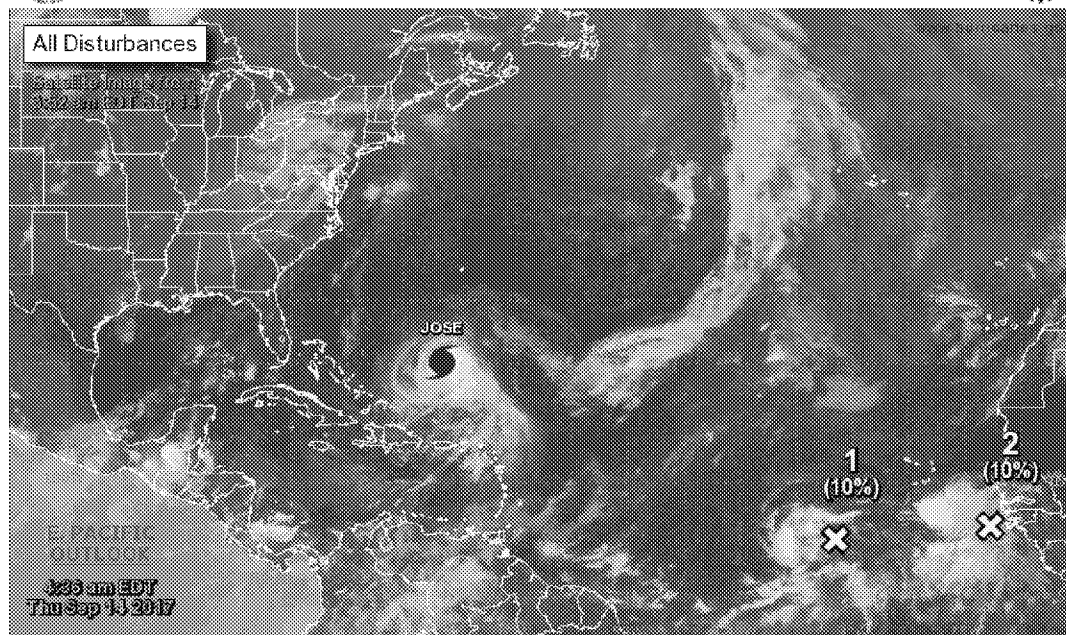
## LONG RANGE PLANNING

- National Disaster Recovery Framework (NDRF) Activities.** FEMA has begun long range recovery planning and is in contact with the EPA Office of the Administrator's (OA) disaster recovery coordinator. The Acting Regional Administrator is Region 2's Federal Disaster Recovery Coordinator with CASD providing support. CASD is in communication with the OA and is working with CEPD and the other divisions to identify Region 2 contacts for the six Recovery Support Function (RSF) areas: 1.) Community Planning and Capacity Building, 2.) Economic Recovery, 3.) Health and Social Services, 4.) Housing Recovery, 5.) Infrastructure Systems, and 6.) Natural and Cultural Resources. This work will assist the Agency to identify potential recovery challenges and plan for resiliency. EPA Region 2 disaster response and recovery personnel are coordinating and will share our Irma data collection and results of our assessment efforts.
- Additional Threats.** No additional storm threats to impact the U.S. Caribbean.



## Two-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

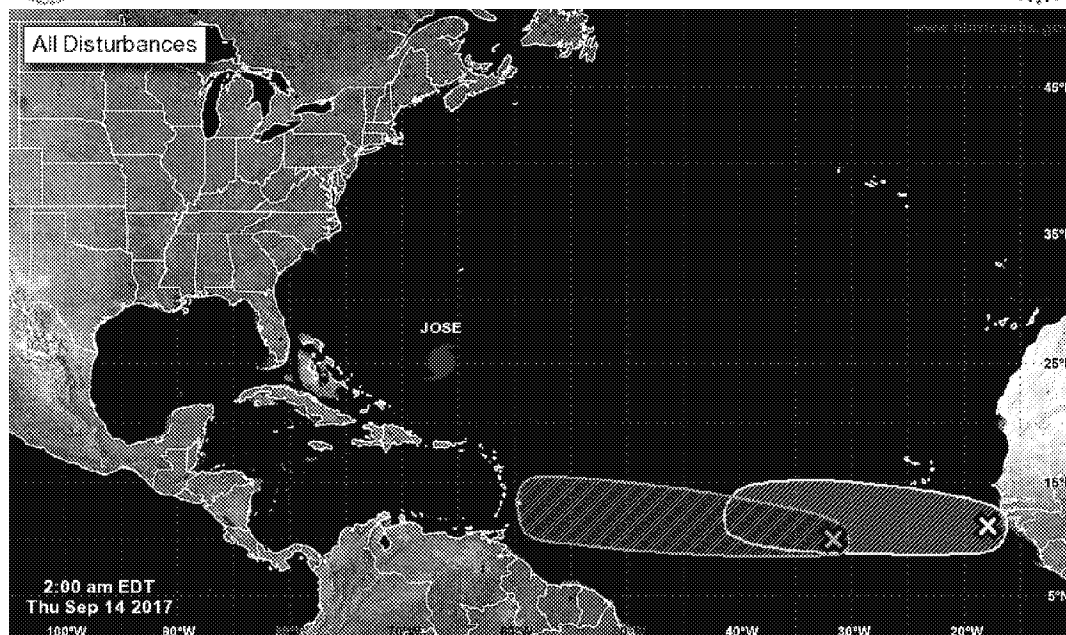


Current Disturbances and Two-Day Cyclone Formation Chance: ☼ < 40% ☼ 40-60% ☼ > 60%  
Tropical or Sub-Tropical Cyclone: ○ Depression ● Storm ● Hurricane  
● Post-Tropical Cyclone × Remnants



## Five-Day Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida



Current Disturbances and Five-Day Cyclone Formation Chance: ☼ < 40% ☼ 40-60% ☼ > 60%  
Tropical or Sub-Tropical Cyclone: ○ Depression ● Storm ● Hurricane  
● Post-Tropical Cyclone × Remnants